UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PUBLIC MEETING AND COMMENTS ON THE

PREFERRED CITYWIDE REMEDY

QUEENS GATEWAY

JAMIACA, NEW YORK

ADDRESSSING POLYCHLORINATED BIPHENYLS (PCBs)

PRESENT IN THE CITY'S SCHOOLS

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Reported by:
AYDIL M. TORRES
Job no: 11926

T R A N S C R I P T of the proceedings in the above-entitled matter being taken by AYDIL M. TORRES, a Notary Public of the State of New York, held at the QUEENS GATEWAY, 160-20 Goethals Avenue, New York, New York 11432.

PUBLIC MEETING EPA PRESENTER:

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ALSO PRESENT:

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SUSAN SCHULZ, EPA
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1 (THE PROCEEDING OPENED AT 6:35 P.M.
2 AS FOLLOWS:)
3 MS. LONEY: Good evening
4 everyone. I'm Natalie Loney. I'm
5 with the Environmental Protection
6 Agency. The purpose for tonight's
7 meeting is to present New York City's
8 preferred citywide remedy and the
9 approach in dealing with PCBs in
10 public schools.
11 We will be taking comments this
12 evening, so there is a stenographer
13 present. So after the presentation,
14 if you have any questions, we ask that
15 you go to the microphone to my left,
16 to your right, state your name for the
17 record. Please speak slowly and
18 clearly, so that your words can be
19 recorded.
20 Let me start by introducing the
21 representatives from EPA. In front of
22 me is Jim Haklar, next to Jim is Mark
23 Maddaloni, Pat Evangelista, and Susan
24 Schulz. In addition, we have Gary
25 Hunt from TRC he is -- Gary is a

consultant for New York City who will be doing a portion of the presentation. For those -- and I'm saying this in English, so some of you may or may not understand, for those who are Spanish speakers, we also have a translator who will provide instantaneous translation, so if you have challenges with English, you can sit right next to him and he will explain everything as the evening goes on. So I'm going to turn the mic over to Jim now again. I do ask that all of you turn off your cell phones or put them on vibrate.

All right, so I'll be back after the presentation to start taking the questions and answers. Thank you.

MR. HAKLAR: Thank you. Welcome, welcome, again, everybody. If we can get the slide. Next slide. Okay. So let's start this. We are here for two main reasons. Actually, one main reason. The main reason 1, to take your comments on New York City

Plans to address PCBs in its schools. And there are two ways that you can send us your comments. The first way is to mail them to me at this address or you can e-mail them to PCBsPreferredRemedy.Region2@epa.gov , and I will get them.

Next slide, please.

So let's talk a little bit about what PCBs are and why they're an issue. PCBs are manmade chemicals. They were manufactured in the United States from about the 1930s to late 70s, and they were considered, like a magic chemical because they had very valuable properties. They were good for use in electrical components. They were good for building materials. For example, in buildings that have window caulk, they made the caulk flexible, and really made it last a long, long time. They had these good, good properties, but they are also hazardous and potentially cancer-causing, and because of the

potential health effects, EPA and Congress banned the manufacturing of PCBs in the late 1970s.

Next slide, please.

So how do we get to the point where we are dealing with PCBs in New York City schools? Probably about, about, I would say, around seven years ago or so several individuals were -- started collecting samples of building caulk from a number of New York City schools. They had that caulk analyzed for PCBs. What they did was they provided the sample results to EPA and they also provided it to the New York Daily News. When we saw the levels, we realized that there was an issue here and we entered into discussions with New York City, and those discussions resulted in an agreement, or a formal agreement, which we call a consent order, which, which -- under which New York City is addressing the PCBs.

Next slide, please.

Okay, so let me just talk a little bit about this agreement with New York City. It's about four and a half years old. It requires the City to perform a study of the PCBs in five pilot schools or five older schools which we call "pilot schools." These are older schools that had PCBs in their building materials. And based on the results of the study, which we call a "pilot study," New York City prepared a report which includes their recommended citywide approach to deal with PCBs, and that recommended approach is what we call a "preferred citywide remedy."

Next slide, please.

All right, now I'm going to give it over to Gary Hunt, and he's going to talk a little, a little bit more about the study they did.

MR. HUNT: Thank you, Jim.

Good evening, everyone. Thank you for coming. I am Gary Hunt, principal and vice president with TRC

Corporation. We are the consulting engineering firm that's working for the school construction, Department of Education, and documenting the pilot study that was agreed to in the consent agreement and final order.

I am going to be talking to you tonight about what was done in the pilot study, some of the findings, and some of what the plans are moving forward.

There goes the slide. Okay. Thank you.

We're going to talk about the pilot study for PCBs in caulk, preferred citywide remedy for all the schools which the ultimate objective of the program is to come up with that, and some of the plans for long-term monitoring.

Next slide.

As Jim pointed out, PCBs were manufactured first in 1925, and ended in 1978, with the onset of the Toxic Substances Control Act, which was

actually legislation that was put in place to deal with PCBs at the time. 1.4 million pounds were produced by Sailien (phonetic) Corporation. The majority of the PCBs were used for light transporters, capacitors. A small percentage, actually, are found in clay in building and construction materials. Beginning in 1950, caulk containing PCBs was used in constructing and renovating buildings, really throughout the entire country, and probably throughout the world. This is a problem, not just in the U.S. but other countries. Congress passed legislation on PCB in 1978, as I said, with the onset of the Toxic Substances Control Act. And then in September of 2009, USCPA issued first guidance on how to deal with PCBs, particularly in the caulk.

Next slide.

In January of 2010, the City of New York and the USCPA entered into an agreement, a consent agreement, final

order, that basically laid out what would be done to investigate the severity of this problem in the pilot schools that are being selected, and come up with, ultimately, the preferred citywide remedy. I should say, this doesn't mean this is the only urban area in the country that they have this problem. I think other people haven't looked at it to the extent that the City of New York and USCPA has.

Next slide.

What was done was, various remedial alternatives were looked at. We've done five pilots. I will show you those in a minute, that were selected for the study. Encapsulation of caulk. Caulk is the material around, you know, windows or masonry work and it did contain PCB that was applied at the time the caulk was applied, and the original purpose of this real program in this consent agreement was to look at caulk and

PCBs, and PCB in caulk, and EPA guidance, and in 2009, we primarily focused on that as well. Encapsulation of caulk, which was putting a coating of material on the caulking so that the PCB cannot migrate out of the caulk, cannot leave the caulk, kind of like a special paint, special coating. Removal and replacing of the caulk. Take the caulk out, put new caulk in, patch and repair, more particularly if its cracked or deteriorated, remedial alternative, removal of windows that had PCB caulk, exterior, interior caulk around the window casing. Then there's removal of light fixtures with PCB ballast. During the course of the first phase of this program, ballast had not really been identified as a potential source, and when it became apparent that they were, we then aggressively started looking at ballast and their potential contribution to the air problem.

Next slide.

Here are the schools that were selected for the pilot programs and what remedial alternatives were deployed in each of these locations. P.S. 170X, 176X, actual repair, PCB remedial alternative, P.S. 199, removal and replacement of PCB caulk, and P.S. 309K, the actual coating of the caulk, again, coating you put on the caulking material to inhibit the PCBs from migrating out. P.S. 3R, removal of ballast, removal -- P.S. 182, window replacement. But, ultimately, ballast were removed in all five of the schools and as I will show you in a moment, it's a very aggressive program in right now to remove all ballast from New York City schools that contain PCBs.

Next slide.

As part of these evaluating alternatives, before the remedial alternative was put into place -- and samples were pre and post. Remedial

PCB testing in air, dust, surface, dust, and the soil on the exterior of the building. Post-remedial PCB air, dust sampling from the same location. In other words, you look at the same location, so there's validity of variables, you wipe the same surface down after it's been cleaned and before it's been cleaned, for example.

Next slide.

There were 430 dust samples taken pre and post in the pilot schools throughout the course of the study. With the exception of one, all of those were found to be below EPA guidance level, which for surface dust is 10 micrograms per 100 centimeter squared. Again, that is a fairly small concentration, for those of you not familiar with scientific notation. And what we concluded from this, this is one location we resampled, we found density below the guidance level. And what we concluded, practices that are employed in the city schools to remove

dust, surface dust, and dust in building were performing satisfactory. So, in other words, it doesn't appear that the dust in the schools are contributing to the PCB issues.

Next slide.

Air samples. We took 1100 air samples. Again pre, post remedial measures in the five schools, and what we found was that the most significant reductions in indoor air concentrations were associated with the removal of ballast, which became actually one of the primary sources, if not, the primary source, in addition to the caulk, and that was something that was developed during the course of the program. That was not initially part of the program, to remove ballast or to remove ballast as a contributing factor.

Next slide.

Discussion of findings. In this first bullet. I did a study when I went to graduate school, Rutgers

University, on PCB in a population, so this is not a new problem, and it is complicated. It's not like lead or asbestos. You are dealing with 209 individual chemical compounds. I don't mean to bore you with that, but it's very complex chemistry that's going on here, and they behave very differently. The light fixtures should be addressed first, that's true, and the City is doing that. We will show you in the next slide how to identify and remove any ballast that contain PCBs and capacitors that are in light fixtures. PCBs in caulk is very complicated to deal with. There is no magic one solution, no silver bullet. It needs to be managed and assessed on an ongoing basis and that is taking place. PCBs may also be present in other building material, secondary sources, for example, not exclusive caulk or exclusively ballast, and more research is needed. I know people hate to hear and see

that but this problem still needs research to resolve what needs to be done.

Next slide.

With respect to the ballast removal program, 238 schools within the city's population have been identified as having the T12 light fixtures that contain are known to contain PCB ballast in their capacitors, and capacitors are small electrical components within the light fixtures. 173 schools are actively being removed as we speak, and a completion date of August or December 31, 2016.

Next slide.

The remedy so far, based upon the date resulted in the remedy that has been prepared by the City, will happen in working with TRC. The light fixture removal program is very prominent, very important, as I showed you in the past slide. A very aggressive program is in place to

remove those ballast that we know contribute to indoor air concentrations of PCBs. There is a protocol to inspect and respond to ballast events, ballast failure, for example. Implement best management practices, which include inspection and remediation of caulk as necessary to remove, replace, patch, repair as needed, and encapsulation, which has limited success. We will continue to investigate that, maintain, and inspect all ventilation systems, which is very important, the air exchange that takes place in a room, transferring PCBs that may be present in the room. Capital improvement projects. If there is a capital improvement project in any school, the part will be removed in combination with those affected parts of the building, and evaluate and excavate soils within any capital improvement projects. There is a guideline to what is acceptable contamination in

exterior soils. Long-term monitoring program to continue in the pilot schools. I will show you that in a minute. We have identified some additional studies in concert with EPA that should be conducted to help us remedy this problem.

Next slide.

The long-term monitoring program. We continue to do air sampling in pilot schools during heating season and non-heating seasons, continue to take bulk samples of remediated caulk. We continue to take samples of the encapsulated caulk to see over time if PCBs reappear and to what extent.

I think that's it.

Back to you, James.

MR. HAKLAR: Okay. So the way the pilot study works, the fieldwork was completed. New York City prepared the report. So what did we do next? Well, under our consent agreement with New York City, the agreement required

EPA to conduct what's called a "peer review," and you got to think of the peer review as if you were writing -- let's say you were writing a letter, and you wanted an impartial person to take a look at it to make sure there were no mistakes or errors and, basically, that's what we did. We had technical experts review what the City did. The agreement also required EPA to hold a public meeting, and that's what we are doing tonight, and what we are doing through next week.

Next slide.

So let's talk a little bit about the peer review. The peer review was independent, and what I mean by "independent," EPA had a consultant manage the actual review. We had no direct contact with the actual peer reviewers. There were three peer reviewers. Two of them were from private industry, the environmental field, and the third one was from a University in the Northeast, and EPA

provided -- we provided the consultants with a series of questions for the peer reviewers to answer, and these questions were also shared with New York City before we provided them to the peer reviewers, so we can get the City's input as well.

Next slide, please.

Once the peer reviewers did what they had to do, the EPA's consultants assembled the various responses into a single report, which is called "the peer review report." And EPA, after reviewing the peer review report, prepared our own document which summarizes our perspectives on the peer review. Both of those documents can be found at this website, and I would also like to say that, in fact, this presentation can also be found at this website for those that are interested.

Next slide. All right.

So what are the major findings of the peer review? In general, the

peer reviewers believed that the City's report is comprehensive and that appropriate methods were used during the investigation of the PCBs with the fieldwork.

Next slide.

One of the questions that we asked the peer reviewers to look at dealt with what we called "the city's reoccupancy protocol." A lot of the school buildings have old light fixtures. These light fixtures have electrical components called ballast and those ballast over time can fail, and if they fail, they can release smoke, and when that happens, the City has an established protocol for dealing with that situation, and it basically involves evacuating the area where the ballast failure occurred, notifying the appropriate parties, ventilating the area, and cleaning the area as needed, and then performing what we call -- what we call "clearance testing," and the City's

clearance testing consists of what's known as wipe samples, where they will take a gauze and wipe it over a surface to see if there's any PCBs, and they would send that gauze to a laboratory for analysis. And what the peer reviewer -- what some of the peer reviewers believed, was that wiped samples alone for clearance testing was not adequate.

Next slide.

We also asked the peer reviewers to look at other approaches for addressing PCBs in caulk. One of the things that you have to realize is that PCBs can be very mobile. If they're in caulk that's in contact with masonry or some porous material, the PCB can move from the caulk into the porous material. PCB can also move from the caulk into the air, and what EPA's Office of Research and Development found was that -- was that the main route that people in buildings can get exposed to PCBs is

through inhaling the PCBs in the air.

Next slide.

We also --- we also wanted the peer reviewers to provide us with some ideas on prioritizing schools to address PCBs. The issue was, do you deal with PCBs during the normal course of construction or do you go out and proactively deal with the PCBs in the schools? And some of the peer reviewers believed that proactively addressing PCBs would significantly reduce exposure, and all three peer reviewers believed that air sampling would be an effective component for prioritizing the schools.

Next slide.

We also -- we also tasked the peer reviewers to consider ventilation. Ventilation is a very important component of this issue. The peer reviewers recommended that ventilation be optimal, it be the best it can be to minimize the level of the PCB in the air. Not only would that

reduce levels of the PCB in the air, that would have side benefits dealing with mold, things like that, and it's also important because a lot of the older school's ventilation systems were constructed or designed to operate properly with the windows open, and through -- and over the years, with the course of window designs changing, newer windows, a lot of the newer windows you can't open, and if the windows -- if the windows are replaced with windows that can't open then that -- then that affects how well the ventilation system can operate.

Next slide.

We also ask the peer reviewers to look at what we call housekeeping or best management practices. A number of slides ago I mentioned that PCBs were placed in caulk to make it flexible. Well, if you -- if you were to look at that PCBs in caulk that's 40 to 30 years old, actually 40 to 50

years old, you could, in a lot of cases, think that this was applied last month because it was -- it still maintains its flexibility and properties. We asked the peer reviewers, should New York City be focusing on flexible caulk or intact caulk? Should they be looking at deteriorating caulk or both or something -- somewhat of a combination, and the peer reviewers weren't consistent in their answer. So some, some focus on the intact caulk, look at both, so the responses were varied.

Next slide.

We also wanted the peer reviewers to consider soil outside of the schools. We believe that from older construction practices at schools, the soil could have been contaminated with PCBs from little bits and pieces of PCB caulk getting into the soil and -- but the peer reviewers did not believe that going

out and proactively evaluating the soil would significantly reduce exposure. And the reason for that is, again, the primary way for an individual to get exposed to PCB in the building is through the air, inhaling the PCBs.

Next slide.

What's our next step? EPA is taking your comments until June 30th and based -- and on those comments and the peer reviewers responses, and this is all outlined in our agreement with the City, we may incorporate revisions to the City's preferred citywide remedy.

Next slide.

The City's preferred citywide remedy -- along with Gary's slide, he mentioned additional research. The preferred citywide remedy did acknowledge that there were information gaps, and after discussion with the City, the EPA recommended two areas for future research. First one

is to test different sampling methods for indoor caulk to really see what's -- what's going on in the schools, and the second one is really to really refine or pin down how much PCB does the caulk contribute to the indoor air. We know that the light fixtures contribute -- were a significant source. Were they the greatest source? EPA doesn't know. We don't know yet. We need -- there is a need to figure out what the contributions from other sources in the -- in the school -- in the building materials are.

Next slide.

So what I want to do, I just want to start wrapping up with some points to remember. A lot of work was done under the pilot study. A lot of good scientific work. We have a better understanding of where PCBs could be found in a school. And just going back to what I said just a few minutes ago, by removing

PCB-contaminated light fixtures, New York City did address a major source of PCBs. There could be others, but, but with regard to the light fixtures, they're addressing this major source, and your comments really do matter.

Next slide.

And this is just recapping. On the top we have the City's preferred citywide remedy, and again, just please, if you have comments, you can send them to me by regular mail at this address, or use the e-mail address. And I think at this time, we are ready for comments or questions.

MS. LONEY: Let me turn on the other mic.

We are going to open up the floor for questions and answers right now, so if you have a question, we're going to ask that you come down to the mic, or if you prefer, don't want to walk all this great distance, I can bring the mic to you. The only thing that I do ask is that you state your

name for the record and speak clearly.

Don't all rush down at once.

Yes?

MS. SHEPARD: Hi, Laura Shepard, reporter for the Queens Chronicle. I was just wondering exactly what health concerns that students who have attended or currently attend any of these schools should look for, worry about?

MR. HAKLAR: For that I'm going to hand the mic back over to Mark Maddaloni.

MR. MADDALONI: Thank you. I am Mark Maddaloni. EPA regional office. PCBs have been known to cause a whole host of adverse health effects. The studies in animals are more prevalent. There is also what we call observation of studies in human epidemiologies has established this. We believe that our exposure guidelines are set at levels that are well below exposure effect levels. In fact, we estimate the exposure guidelines to have a safety

factor of about 300, so we establish an effect level in an annual time frame because the simple etiology wasn't strong enough to develop a robust response relationship, so based on a good animal model, primate model, actually, we set our exposure guidelines 300 times below that so we're not expecting to find effects per se at or below the exposure guidelines. I think our concern is when you exceed those exposure guidelines you begin to chip away at that margin of safety that we are all granted as little as -- it's very important that we maintain those exposure, exposure levels below our exposure guideline.

MS. LONEY: Additional questions?

MS. SHEPARD: If you're not really examining the soil, do you give any guidelines to schools that encourage, you know, kids to plant gardens outside or anything?

MR. HAKLAR: Well, if there was any, any possibility or any indication from the records where the school was constructed that there could possibly be PCBs, it was built during the time PCBs and building materials were used, we would suggest, use prudent measures, you know, or contact the school construction authority to get additional details and guidance. Plus, you guys want to say anything?

MS. LONEY: Hi.

MS. BERRY: Jessica Berry.

Maybe you already addressed it, I may have missed it. What event took place that started the research and process of looking into PCBs? Was there an incident that took place? Was it just a hunch that you guys had that there were PCBs?

MR. HAKLAR: Well, what happened was that it -- actually, it started not in New York City but in another school, and there was an individual that was a contractor, not in this

area, but in another area of the country that used to apply PCB caulk to buildings. He would bring it in containers. One would be the caulk, the other container would be the PCBs, and he would fix them on-site. So he was very knowledgeable, and so we heard about the issue of the PCBs, but there were -- there was a small group of individuals who would go to different schools, and they would walk up to the school and pull off the piece of a building caulk, and take that caulk and have it -- run it -- give it to a lab for analysis, and that's how we really found, found that it could be in New York City schools.

MS. LONEY: Any follow-up questions?

MS. SHEPARD: Last question, are there any issues that are specific to Queens schools?

MR. HAKLAR: I'm just thinking. Give me a moment. There are schools that we are aware of that had light

fixture ballast failures, aside -- and there are Queens schools that we have -- we dealt with the City in approving cleaning up plans for its soil, but aside from that, I am unaware of any specific.

MR. EVANGELISTA: They are part of the 700.

MR. HAKLAR: Right, they're part of the 6, 700 schools throughout the city that could potentially have PCB issues.

MS. GIORGI: Christina Giorgi, I don't -- I have made extensive statements at the previous meeting, but I have a question for you, Jim, and isn't it true that based on these studies that have been done today, we really don't know how serious the problem is with regard to the health risks to the staff and students.

MR. HAKLAR: There is -- we know a lot and there is still information that can be -- that can be gathered. We do -- we have recommended to the

City that air testing be performed after a light fixture failure, and suggested that it be included as we go forward working with the City prioritization team, since the rest -- since the route of exposure is through the air, that would be a -- that would be a beneficial component.

Mark, would you like to...

MR. MADDALONI: I think it needs to be emphasized, the exposure that the -- the inhalation pathway, so that's where the lion's share of our concern lies and the best way to determine how much exposure is occurring through the inhalation pathway is to build indoor air sampling and so we believe the City has a good program. We also believe that if they added indoor air sampling, it would be a great program.

MS. GIORGI: I have a follow-up question. Thank you, I appreciate that very much.

The recommendation is that the

EPA make the indoor testing. Would you recommend that that testing be done with the windows closed, in addition to the windows open, or does EPA take the position that it is adequate to test the air when outdoor air is introduced into indoor classrooms, particularly, given the reality that there are many classrooms where the windows are closed, where children are attending school with the windows closed currently?

MR. MADDALONI: It's a good question. I don't know that any single sampling protocol is going to satisfy every, every conceivable condition. It won't because there is just too many of them. So we're aiming for the meaty part of the curve and that's, I think, the appropriate thing to do, what's most common, and I believe that the sampling that has been done is reasonably representative of the way that schools operate for the most part. More closed in the

winter, somewhat more ventilated in warmer months. There is -- we discussed this Tuesday, and at Stuyvesant, with the degree of ventilation, and I said, reasonable people could differ and debate what is a most likely scenario. Again, we're not looking for the absolute worse case here because that's what's done under this screening, to see if you have a problem to begin with. We already know that there is a problem. I think it's reasonable. I was doing some of my own research and I have it right on my cell phone. It's an engineering website, one that recommended air exchange rates for buildings. For schools 4 to 12 exchange an hour. That's what an engineering field recommends. That's a lot. And it's by no means the highest. You have numbers for bars. I'm sure. I'm sure casinos are higher. They want to keep people awake, so they can gamble. In a

minimum of 4 is recommended for even the most -- how should I say stagnant type of building. So I think real life conditions indicate that we have -- we have to conduct these studies with an average, average time frame and that's not negligible, so I think that's the best way I can answer that question.

MR. HAKLAR: I would also like to add, the people that weren't present at the other public meetings, a lot of the older schools have for their ventilation system, it really isn't a true ventilation system. It's an exhaust system. There are fans up on the roof, and what they do, they pull air through, and for them to properly operate, they have to get the air from somewhere and what -- for it to properly operate, they have to have the windows cracked open for a certain extent. We saw this at one school where the windows were closed when the City was sampling, and we tried to

open the door to the outside, and the difference in pressure because -- it blew the students artwork all over the place. So they need the windows open to a certain extent.

MS. LADY: Mr. Maddaloni, can you go over the health effects of PCBs and also which symptoms would raise a red flag for you as a problem with PCB?

MR. MADDALONI: I don't know how to answer that. That's a challenging question. So they have been implicated in reproductive developmental outcome, and effects on immune system, depression of the immune system, effects on the nervous system, reductions, and cognitive functions, liver, kidney toxicity, and they are deemed to be by the United States Environmental, a possible carcinogen. The evidence in humans is inconclusive. Animal models have demonstrated certain types of cancers, so as I said before, from most these

studies in animal models, we identified what's called a lowest observed adverse effect level, and that was an effect on the immune system. It was the most sensitive outcome and we found that level, and then added safety factors through a standard mechanism. We didn't pull them out of a hat, and I will try to go through them very briefly. We are working with an animal model and we added a factor of 10, safety factor of 10, just going from animals to humans because we didn't have the human data. We added another factor of 10, just to account for human variability. We know not everyone is alike. And then there was just an additional factor of 3, which is called a general uncertainty factor, 3 times 10, times 10, that's the 300 safety factors that we operate with. So it's -- it's a question of toxicology that -- I was just down at a meeting in our research, Triangle Park, North

Carolina facility, and one of the burning areas of interest that we are trying to better understand is what happens at levels above the exposure guidelines. At what point could you begin to see effects when you are below the observed effect level? There may be some more subtle effects that we can't or we don't have the tools to currently observe. We're working on them. I can't give you a clear concise answer to that, at what point the effects occur. We are very concerned that -- again, we have standard risk assessment procedures. We have set exposure guidelines. When we exceed those guidelines, that sends up a flag. That's the flag. It doesn't mean that they're effects. It means that people are not being -- they're not having the benefit of the level of safety that we would like to see applied across the board. Okay, so when those levels exceed those guidelines, it does not mean an effect

will occur. Anyone that knows me, knows I'm one to say, one exceed does not a hazard make. I will be the last one to say that any one reading that exceeding our exposure guideline would result in an effect. If I believed that, I would have long since recommended the evacuation of schools. I don't think it's appropriate, but I think we need to do everything -- I think everyone in this room agrees that we need to do everything reasonable to keep exposure as low as possible, and we believe that indoor air sampling will better inform that process.

MS. LADY: Follow-up questions. Has there ever been any sort of health complaint in New York City?

MR. MADDALONI: There's lots of complaints in New York City.

MS. LADY: No, no. In regards to PCBs or linked PCB exposures?

MR. MADDALONI: Not that I know of, and my colleague reminded me, one

of the things also about PCBs is they cause chronic health effects. Cancer, things like -- and it's very hard to measure. We would need a population, literally of millions, in order to maybe identify excess lifetime cancer cases with statistical confidence. So it's not something you can easily identify. We do it more theoretically. So PCBs have very low acute toxicity and immediate toxicity, so it is really the long-term, the recurring exposure, and that's why we have been insistent that the City maintain its long-term levels below our exposure guidelines.

MS. LADY: One more, I promise.

So, actually, let me -- how can I phrase this so it doesn't sound too bad? At what -- obviously, we discussed the peer reviewers and you discussed the indoor air sampling. What happens if you test the air indoors and there is a problem and what is the remedy?

MR. MADDALONI: Well, there has been a perfect track record of that at P.S. 199, where the initial air sampling was quite high and over a number of subsequent steps, it didn't all happen at once. The removal of the light fixtures has been articulated here, had a huge impact on reducing the indoor air levels, treating the caulk in various types of ways. Either removing it, encapsulating it, has had an effect. Increasing ventilation has a huge effect. And, finally, they also used air filtration at P.S. 199. So it was a combination of actions that in that case were necessary in order to reduce levels to an acceptable range.

MS. LADY: You have -- obviously, we don't know how long this has been going on for, correct?

MR. MADDALONI: That is correct. In the 1960s.

MS. LADY: Do you do a model back to find out what the levels are

at that point and exposure, and also at what point or not at what point -- how long does it take to become ill and at what level?

MR. MADDALONI: I don't think we can do that kind of modeling, what we call "gross reconstruction." A lot of exposure that we are most concerned with now is coming from ballast that have failed. Obviously, when they were put in in the '60s, they hadn't failed. They were well -- in very well-contained systems, as was intended. The caulk is just -- again, it's hard to determine what the rates were 40, 50 years ago. That kind of gross reconstruction would have such incredible uncertainty attached to it, I don't think it would be useful, and again, as far as effects, yes, the longer you are exposed, the greater your risk. So we recognize that some students, teachers, staff may have been exposed for some time. So that is why it is so important to reduce

the level of exposure to as low as possible.

MS. LADY: Thank you.

MS. GIORGI: Christina Giorgi again.

MR. MADDALONI: How did I get the mic?

MS. GIORGI: First, I guess this may be more of a statement than a question. It's my understanding that, you know, you made -- you said this several times, that the removal of the PCB light fixtures inside is reducing air concentration, and it's really hard to even say this question because I was really involved in, you know, getting removal, and I feel very good about what we accomplished with that, but from my review of the actual studies, there are instances where it wasn't -- you can't really make that direct of a link and you are -- cases where you removed the light fixtures, and it didn't go down, and it seems to be that it's more introduction of

outside air that influence the reduction. So I guess I'm not quite sure what the EPA study definitively says about the fact that it resulted in a reduction. That's the first question I have. And the second is, have we done an inventory of the schools that are on the list to have the lights removed by 2016, and ensure the ventilation systems are working or that the windows are open?

MR. HAKLAR: Let me clarify, I guess, as far as your first comment. What I said during my presentation was that the removal of light fixtures represented a major source of PCB. They absolutely are removing significant amounts of PCBs from the schools. Are they removing all of them? Probably not. They're still -- there could be PCBs in the caulk, there could be PCBs in paint, there could be PCBs in other building material. The removal of those fixtures is an extremely important

step. Regarding an inventory of the schools, could you just restate your question, please? I just want to make sure that I respond properly, Christina.

MS. GIORGI: I should just stay here, I guess.

What I was hearing before was that it was the removal of light fixtures that reduced the air concentration of PCBs, not reducing the amount of PCBs, and clearly you know there is tons of PCB contributions, and that a lot that removed ballast, that's not what I heard articulated in terms of this. I am sitting here listening in and I am hearing this, you know, we can introduce the recommended air exchanges, making out at bar levels but, you know, it's, you know, a setting for a school, where we have an operating system. We can get EPA to get the air levels to acceptable ranges, and I know from the ballast

that we saw in litigation, you had some schools that had nearly 100 percent of the light fixtures leaking, and I appreciate there's no way we can have them all done tomorrow but to get them removed very quickly and am very grateful for their efforts. I guess I would just raise the question, you know, given the value that EPA and, I think, SCA places on introduction of outside air, what inventory has been done to ensure that those schools that still have these lights have the appropriate ventilation now?

MR. HAKLAR: Okay, I am going to have to defer to the City.

MR. HOLDEN: I don't have a comment on that.

MR. HAKLAR: You have to realize, in terms of dealing with the schools, we are still -- there are still discussions that we need to have with the City in terms of how to deal with all the schools. You have hundreds of schools that could

potentially have PCB, so we don't have a prioritization at the moment. That's what we have to have future discussions with the City on. In terms of ventilation, yes, ventilation is an important component, but it's a component of what we would -- of what we would consider a multi-approach, whether that includes the housekeeping, the best management practices that the City is doing, whether it includes one of the alternatives that the City studied. It's -- it's just -- it's understood that there are potentially a lot of schools, and to have the ventilation system operating at 100 percent all the time, you know, may or may not occur, but the ventilation is one component of a multicomponent approach.

MS. LONEY: Are there any further questions?

MS. SHEPARD: I was just wondering, how much did the pilot

study cost and how much is the City spending on the remediation?

MR. HAKLAR: The pilot study was -- the actual costs were incurred by the City. The City, the City really spent for that. I'm going to have to defer to the City.

MR. HOLDEN: I don't have an exact number of what we have spent on the pilot program. Certainly in-house resources, we have had the labs, we have sent many, many samples all as part of the pilot program. 10 -- we are talking millions of dollars over the last several years. But we are still, you know, I think this is an issue that has been worthwhile and productive collaboration with EPA, so as far as light fixtures go, that's going to approximately be a billion dollars, give or take, before we replace all of the lights in all the schools by December 2016.

MS. LONEY: If there are no further questions, we're going to

close the session.

If you can go back to the previous screen. I want to remind everyone that the comment period closes on June 30th. You can send your comments to James, or as we like to call him, Jim Haklar, USCPA, 2890 Woodbridge Avenue, Building 10, Edison, New Jersey 08837. Or to make it easier on yourself, you can e-mail your comments to PCBsPreferredRemedy.Region2@EPA.gov Again, the deadline is June 30th. We will be having two more meetings on this issue. One next Thursday --

MR. HAKLAR: One on Monday.

MS. LONEY: One on Monday in Staten Island and one on Wednesday in Brooklyn. All right. So thank you everyone for coming and maybe I will see you in Staten Island or Brooklyn.

(Time noted: 7:33 p.m.)

I N D E X

COMMENTS / QUESTIONS / ANSWERS

C E R T I F I C A T E

STATE OF NEW YORK)
: ss.
COUNTY OF QUEENS)

I, AYDIL M. TORRES, a Notary Public within and for the State of New York, do hereby certify that the foregoing record of proceedings is a full and correct transcript of the stenographic notes taken by me therein.

IN WITNESS WHEREOF, I have hereunto set my hand this ____ day of _____, 2014.

_____
AYDIL M. TORRES